ABSTRACT OF THE DISCLOSURE

A data dependent scrambler (DDS) for a communications channel that transmits a user data sequence having a plurality of symbols includes a scrambler that generates a scrambled user data sequence that is based on the user data sequence and a seed. A first encoder selectively interleaves adjacent symbols in the scrambled user data sequence if an all-zero symbol is produced by bit interleaving. The first encoder identifies a pivot bit that is adjacent to the all-zero symbol if interleaving is performed and replaces the all-zero symbol with an all-one symbol if the pivot bit is zero.